SECTION 1. INTRODUCTION AND BACKGROUND

Watershed approaches to managing natural resources have had a remarkable resurgence in the Pacific Northwest in the last few years. The trend towards an environmental management system that is community–based and geographically–targeted is likely to continue. The watershed approach has great appeal because it incorporates the principles of ecosystem management, and has been successful in stirring the interest and involvement of citizen volunteers and agency staff. There remain, however, several significant issues related to communication and information management that could limit the success of the watershed approach. This project responds to the need for a method of improved information management and communication among local, state, federal, and tribal watershed partners.

The Pacific Northwest has proven to be fertile ground for many watershed initiatives. Watershed groups or associations have been formed by citizens throughout the Pacific Northwest to address local water quality problems. Coeur d'Alene Lake, Henrys Fork, Lake Sammamish, Nisqually River, and Tillamook Bay are a few of the locations where citizens have taken the lead seeking comprehensive solutions to water quality problems. There are also many other state and federal watershed initiatives that are occurring, including the Washington State WAC 400–12 process, Oregon Watershed Councils, and the President's Forest Plan. These are only a few of the many local, state, tribal and federal watershed initiatives that represent a significant shift in the management of natural resources in the Pacific Northwest.

The purpose of this project was to evaluate the potential for increasing coordination and integration among emerging and established watershed partners. It examines how independent local, state, tribal and federal groups can continue to use the watershed approach to become more effective partners on a voluntary basis. The report findings are based on information gathered from participants involved in a wide range of watershed activities.

1.1 Statewide Watershed Frameworks in EPA Region 10

Water quality programs in the states that comprise EPA Region 10 (Washington, Oregon, Idaho, and Alaska) have all taken steps to develop and implement statewide watershed frameworks. The goal of these watershed initiatives is to provide a framework that will integrate the water quality management activities of local, state, and federal partners. Successfully implemented, this approach systematically incorporates the principles of watershed management into the daily operations of water quality programs. A statewide watershed framework allows those agencies to better coordinate their support for existing and emerging watershed projects. In some states, the statewide watershed frameworks of the water quality programs have been designed to complement the many existing and ongoing watershed activities of other stakeholders.

The state water quality programs started the watershed framework development process without a well defined mandate. There was not sufficient agreement among stakeholders to enable one agency or group to lead the development of a statewide watershed framework. Therefore, the water quality programs were careful to define the limits of their initiatives so that they did not encroach on other agencies' program areas.

The statewide watershed frameworks were developed by work groups having representatives from participating programs. The work groups considered a series of topics pertaining to the elements of a watershed approach. The elements most watershed planning and implementation processes share in common are detailed in Section 1.2. These common elements include: stakeholder involvement, geographic management units, statewide cycle, strategic monitoring, basin/watershed assessment, priority setting and targeting, management strategy development, watershed plans, and implementation.

These elements were used as design tools by the work groups to help structure the statewide watershed framework development process. The work group results are compiled into a framework document that describes the schedule and procedures for a watershed approach.

The framework developed by each state is tailored to its specific circumstances. Substantial differences exist between states based on the descriptions of their approaches provided in draft or final framework documents. Alaska, for example, is the only state that used a framework development work group which included representatives from other agencies, native corporations, industry associations, and environmental groups. In other states such as Washington, the agencies focus on more effectively organizing their own activities, and on increasing the level of public involvement in managing water quality. This internal focus can, nevertheless, encourage voluntary interagency collaboration. Regardless of differences between states, each watershed framework is based on a number of common elements. Table 1–1 summarizes the status of the framework for each Region 10 state water quality program.

1.2 Common Elements of a Watershed Approach

The elements of a watershed approach described in this section are shared by both the statewide framework and individual small scale watershed projects. The following element summaries (illustrated in Figure 1–1) provide the context for further evaluation of watershed communication and information management needs in Region 10.

- watershed management units: Participating stakeholders adopt geographic management units using commonly defined boundaries to provide spatial coordination for management activities. Often, ground water aquifers as well as surface waters and their watersheds comprise these management units. The watershed management units must include smaller hydrologic units, "nested" units, that integrate activities from the smallest project scale to large river basins and ecoregions.

Table 1–1

- watershed management cycle: The watershed management cycle provides temporal coordination to stakeholder activities and is made up of three components: 1) a series of steps for building and implementing Watershed Management Plans; 2) a common schedule of activities within these steps; and 3) a sequence for addressing watersheds. The cycle is voluntary and can easily accommodate more complex schedules.

- stakeholder involvement: Stakeholder involvement is an open process that provides meaningful roles to all interested parties. A watershed approach should include administrative structures and procedures for incorporating a broad range of partners in the watershed management planning and implementation cycle.

- strategic monitoring: Strategic monitoring addresses information needs identified by stakeholders and supports watershed goals and objectives. This element supports both development of specific environmental objectives, indicators, and measures of success and implementation of the priority setting feature of the watershed approach. Strategic monitoring and information gathering occur throughout the watershed cycle to support decision-making with up-to-date scientific data on watershed condition

- watershed assessment: A comprehensive watershed assessment provides a scientific basis for identifying priority issues in the watershed, and for developing management strategies. Program priorities are evaluated relative to watershed conditions. Assessment precedes decision-making regarding the implementation of program requirements.

- prioritization and targeting: This element recognizes that environmental management needs will vary from location to location, and that these needs will consistently exceed the resources available to address them. This element provides procedures for assigning scarce resources more effectively and efficiently. It should be an educational and consensus building step that includes all watershed partners.

- developing management strategies: Watershed teams composed of a broad range of stakeholders provide the capability to develop comprehensive solutions to targeted watershed issues. The objective in using teams is to encourage collaborative solutions, reduce redundancies, integrate the efforts of watershed partners, and increase the number of possible resource management options.

- watershed management plans: A Watershed Management Plan (Plan) consolidates assessment data, documents decisions on targeted priorities, describes management strategies, and presents schedules and agreements for implementing management strategies. The Plan documents the consensus building process, and serves as a guide for stewardship, or as an "owner's manual" for watershed stakeholders. If the Plan is compiled as the watershed process proceeds, it can serve as a central collection point for information, and be used as a

resource for developing other communication products.

Fig. 1–1. Common Elements of A Watershed Approach.

Watershed Management Plans may also provide a common product for stakeholders that fulfills many local, state, and federal requirements.

- implementation: The implementation element focuses the process on practical solutions and provides a horizon for planning activities. Watershed Management Plans include information describing specific implementation responsibilities, agreements, and schedules.

A single element does not stand alone; the activities of any one element are keyed to those of the others. For example, a Watershed Management Plan cannot be successful in the absence of other elements. The Plan is built by and contributes to the other elements. The Plan is comprised of accumulated background information that can be used for priority setting and targeting. The Watershed Management Plan communicates the information (e.g., schedules, agreements, technical information) necessary for the implementation actions that directly or indirectly result in water quality improvements.

Watershed Management Plans may serve many different purposes and fulfill a variety of requirements.

Watershed Management Plans can serve as a common reference document for the planning and implementation cycle that has been adopted by participating watershed partners. The status of watershed resources is reported, priority issues are identified, and recommended management strategies are described. Agreements between watershed partners that define collaborative activities may also be included in the Plan. Watershed Management Plans may be used as a guide for implementing water quality management activities. An example outline of a Watershed Management Plan is shown in Appendix A.

Many different approaches to watershed planning and Watershed Management Plans are being developed in states around the country. Experience indicates that Watershed Management Plans can fulfill a broad range of requirements for agency partners. In some states, Watershed Management Plans have been useful as a common product for watershed partners, making it less likely for anyone to "drift" away from the watershed process.

1.3 The Case of Washington State

In 1992, the Washington State Department of Ecology (Ecology) Water Quality Program was involved in a process to develop a statewide watershed approach. Its goal was to organize Ecology's Water Quality Program permitting activities on a geographic basis. The initiative was viewed as the first phase of a more comprehensive watershed approach, and thus, the scale and focus of the initial effort included only some of Ecology's water quality activities.

The Water Quality Program identified a list of potential barriers to the watershed approach in Washington, and requested the assistance of EPA Region 10 in overcoming these barriers. Ecology and EPA Region 10 staff met in Tacoma to discuss them. At the meeting, the Director of the Region 10 Water Quality Division made a commitment to help Ecology address the barriers to the watershed approach. Several of the problems were resolved at the Tacoma meeting, and others have been addressed since that time.

Ecology indicated that the numerous individual program reporting requirements mandated by the Clean Water Act tied up resources unnecessarily, and redirected the communication emphasis in remote locations from watershed residents to reporting officials. Ecology proposed that program reporting requirements be consolidated into a single watershed report, similar to the Watershed Management Plans. The primary purpose of this document would be to provide watershed assessment data, and information on Ecology's activities to watershed residents and other stakeholders.

This proposal raised many important questions relating to reporting requirements directly mandated by the Clean Water Act. Region 10 agreed to review program reporting requirements, and where possible, allow watershed reports to fulfill the reporting function. This project initiates the consideration process of consolidation of reporting requirements. This pilot analysis considers information and

communication requirements/needs for several programs responsible for implementing Clean Water Act sections; the analysis also extends beyond Ecology and EPA and includes the information/communication needs of several other water quality and resource management stakeholders.

1.4 Project Purpose

U.S. EPA is seeking opportunities to help state and local agencies meet Clean Water Act (CWA) and Endangered Species Act (ESA) requirements through the watershed approach. Examples of CWA requirements that can be addressed through the watershed approach include: 303(d) Total Maximum Daily Loads listing and mitigation strategy requirements; 305(b) water quality assessment reports; Triennial Standards Review and Update; NPDES permitting and wet weather programs; Comprehensive State Ground Water Protection Program – Wellhead Protection; and Nonpoint Source Management Plans. Other region-wide initiatives such as the Salmon Strategy and the Forest Plan also involve a watershed approach. In addition, it may be possible to meet some of the requirements of the Endangered Species Act using the watershed approach. This project examines the feasibility of using the watershed approach to fulfill the goals and meet the requirements of these acts and programs.

The initial project focus was on the potential for using Watershed Management Plans to better coordinate the activities of multiple partners. This project responds to Ecology's request for better understanding how Watershed Management Plans can consolidate a variety of communication and reporting requirements with one product. Thus, another objective of the project is to improve understanding of the use of Watershed Management Plans in the Pacific Northwest by soliciting information on opportunities for, and barriers to, using Watershed Management Plans from a variety of agency staff and watershed team participants.

Washington is the Region 10 state selected for a case study in this report. The diverse array of watershed projects and approaches being implemented in Washington state offers an opportunity to explore common information needs and efficiency achievable through sharing of information. The scope of this report provides for discussion of some of the watershed projects in Washington. Watershed approaches and projects in Alaska, Idaho, and Oregon were not within the scope of this project.

The Washington case study may be useful to Region 10 in determining how it can promote opportunities and remove barriers to more effectively use Watershed Management Plans elsewhere in the region. The project report may also be useful to others as a reference document for decision-making relating to the watershed approach.

Section 1 of the report provides background information on the status of the statewide watershed framework in EPA Region 10 states, and describes the common elements of the watershed approach,

and in particular, Watershed Management Plans. Section 1 also describes the project approach.

Section 2 provides brief descriptions of numerous watershed initiatives and programs in Washington state, and considers opportunities and barriers to the use of the watershed approach by these agencies and groups. The complexity of information and communication needs that exist within watersheds is depicted by a mosaic of watershed activities. It is the complexity of this mosaic that raises doubts regarding the use of a single Watershed Management Plan to fulfill all information and communication needs within a watershed.

Section 3 proposes an alternative information management and communication model -- termed here the "watershed information clearinghouse." This section describes areas of consensus regarding the use of information clearinghouses in lieu of Watershed Management Plans to serve as a single product (e.g., assessment report, cooperative management strategy, implementation guide, accounting report) for watershed planning and implementation initiatives.

Section 4 briefly describes two example program areas and evaluates how the watershed clearinghouse model could lead to more effective implementation of these programs.

Section 5 presents several recommendations for next steps to take in establishing watershed information clearinghouses in Washington state that were suggested by project participants in their interviews.

1.5 Project Approach

To evaluate how Watershed Management Plans can consolidate a variety of communication and reporting requirements, this pilot analysis solicited information on opportunities for, and barriers to, using Watershed Management Plans from a variety of agency staff and watershed team participants. The information and communication needs of various potential watershed partners resulted in an unanticipated recommendation for a model to address those needs.

Interviews were scheduled with individuals who have had experience in watershed projects or activities sponsored by the program areas of interest. The project team attempted to obtain a balanced sample of interviews representing individuals with local, state, federal, and private citizen perspectives. One gap in the analysis is the perspective of tribal representatives, an omission that should be corrected in any future analysis.

Each interview candidate was mailed an interview information packet that contained background information on project objectives, background information on watershed approaches, and interview questions. The interview questions were designed to identify the watershed information needs and products of those interviewed. The interview questions also aimed to identify the communication

requirements and objectives of the programs, agencies, and volunteer watershed groups that were evaluated. The eight-page packet is included here as Appendix A.

The project team contacted each interview candidate and confirmed a meeting time and location. Some interviews were conducted over the telephone. Most of the personal interviews were completed during the week of September 9th through 13th in Olympia, Yakima, and Seattle, (and vicinity) Washington. Supplemental interviews were completed later in September and in November. In all, 43 interviews were completed. The roster of people interviewed is included as Appendix B.

It is important to note that after the first few interviews, the project team recognized that a single Watershed Management Plan would not fulfill the information and communication needs of interview participants. A single Plan was viewed as having too many limitations to fulfill the needs of all partners. A written document such as a Watershed Management Plan was also viewed as requiring a level of commitment that was not sustainable by newly developing partnerships. In the second day of interviews a different concept emerged -- a central information base that could make essential information available to watershed partners and facilitate communication and decision-making among partners. When subsequent participants were presented with this concept, they responded favorably and expanded to meet their needs. Therefore, the project focus was revised to explore an alternative "watershed information clearinghouse." The project report reflects this shift in emphasis.

Not all project participants were concerned with the same watershed issues (i.e., The Endangered Species Act, the multiple Clean Water Act requirements, the Salmon Strategy, the Forest Plan). However, participants had objectives or needs that could potentially be fulfilled through the use of watershed approaches. By identifying mutual and overlapping objectives among potential watershed team members, the project evaluates whether or not watershed partnerships can sustain a commitment to a common process and product. Towards this end, the project interviews aimed to identify participants' information and communication needs (e.g., spatial scale, technical detail, regulatory versus voluntary).

The project report is a synthesis of the completed interviews as reconstructed from notes written by the project team and the authors' thoughts. It represents an integration of concepts rather than any one model currently under development. There has been no attempt to identify individual responses. Each interview participant was sent a copy of the draft report for review. Their comments were included in the final project report.

This report synthesizes interview concepts shared by and between interviewees, to enhance communication and information element of the watershed approach. In some states, this element has been fulfilled through the development of a Watershed Management Plan. However, the interviews conducted for this project suggest that a more dynamic forum for promoting communication and meeting information needs will be necessary for a comprehensive watershed approach to be successful.

In addition to conducting interviews, the project team selected two program areas for extended analysis (Section 4):

- The Endangered Species Act
- National Pollutant Discharge Elimination System (NPDES) Wet Weather programs